

Serial No. 10/662,368

Attorney Docket No. 01-241-DIV-RCE

**LISTING OF CLAIMS:**

RECEIVED  
CENTRAL FAX CENTER  
JUL 06 2006

Claims 1-5 (Cancelled)

6. (Currently amended) A fabrication method for a printed wiring board, the method comprising ~~processes of:~~

providing an insulator board made of thermoplastic resin and having a via-hole, a first surface and a second surface that is opposite the first surface;

providing first and second conductor patterns that are respectively located on the first surface and the second surface to cover the via-hole, and that include a metal;

packing an interlayer connecting material in ~~the~~ via-hole formed in ~~an~~ the insulator filmboard, the interlayer connecting material including a first metal and a second metal having a higher melting point than a heating temperature required for interconnecting the first and second conductor patterns; and

interconnecting electrically the first and second ~~a plurality of~~ conductor patterns with a unified conductive compound formed from the first and second metals sintered by hot-pressing the interlayer connecting material in the via-hole between ~~a plurality of~~ the first and second conductor patterns,

wherein, by the interconnecting, ~~process includes hot-pressing the insulator film to deform the insulator film to protrude out into the via-hole, thereby forming an inclination of a side wall of the conductive compound, which is adjacent to an area contacting the conductor pattern, against the conductor pattern in such a manner that the farther from the conductor~~

Serial No. 10/662,368

Attorney Docket No. 01-241-DIV-RCE

patterns on the side wall, the closer to the first and second solid phase diffusion layers are formed from the metal in the first and second conductive patterns and the first metal of the unified conductor compound diffused into the metal in the first and second conductor patterns and are located between the unified conductive compound and the first and second conductor patterns, and a volume of the unified conductive compound is reduced relative to a volume of the interlayer connecting material.

a sidewall of the unified conductive compound in the via-hole becomes concave in shape and approaches a center axis of the via-hole approximately halfway between the first surface and the second surface of the insulator board, and

the first and second conductor patterns are electrically interconnected by the unified conductive compound and the first and second solid phase diffusion layers.

7. (Currently amended) The fabrication method as in claim 6, wherein a cross section of the unified conductive compound is formed in an arch shape on a cross-sectional plane passing athrough the center axis of the via-hole in the interlayer connectinginterconnecting process.

Claims 8-9 (Canceled)

10. (Currently amended) The fabrication method as in ~~claim 9~~claim 6, wherein volume reduction ratio of the unified conductive compound to the interlayer connecting material is more than 5 %.

Serial No. 10/662,368

Attorney Docket No. 01-241-DIV-RCE

11. (Currently amended) The fabrication method as in ~~claim 9~~claim 6, wherein:  
the first metal and the second metal in the interlayer connecting material contains are in the form of metal particles; and

the interlayer connecting processinterconnecting includes sintering the metal particles to form the unified conductive compound when the interlayer connecting material is hot-pressed.

12. (Currently amended) The fabrication method as in claim 11, wherein:  
the conductor pattern is made of metal;  
the metal particles contained in the interlayer connecting material includes of the first metal particles that form a first alloy with the metal making up the conductor pattern, and the metal particles of the second metal particles that have a higher melting point than a heating temperature at hot-pressing for interconnecting layers and forms form a second alloy with the metal particles of metal making up the first metal particles; and

a plurality of the first and second conductor patterns are interconnected electrically by forming the sintered and unified conductive compound by making the second alloy between both metals respectively making up the first metal particles and the second metal particles and by promoting mutual solid phase diffusion between the metal particles of the metals respectively making up the first metal particles and the conductor pattern through the hot-presshot-pressing of the interlayer connecting material interposing interposed between a plurality of the first and second conductor patterns.

Serial No. 10/662,368

Attorney Docket No. 01-241-DIV-RCE

13. (Currently amended) The fabrication method as in ~~claim 9~~claim 6, wherein the ~~interlayer connecting process~~interconnecting includes heating the insulator ~~film board~~ at a temperature at which modulus of elasticity of the thermoplastic resin making up the insulator ~~film board~~ is 1 - 1000 MPa.

14. (Currently amended) The fabrication method as in claim 12, wherein the ~~first metal~~ particles of the first metal are tin and are included in the interlayer connecting material by an amount between 20 weight % and 80 weight %.

15. (Original) The fabrication method as in claim 14, wherein the tin is included by an amount of 50 weight %.

16. (New) The fabrication method as in claim 14, wherein the metal particles of the second metal are silver.